PS Docket № 10-255 & 11-153

Before the Federal Communications Commission

In re
Facilitating the Deployment of Text-to-911
and Other Next Generation 911 Applications

Framework for Next Generation 911 Deployment

on notice of proposed rulemaking

COMMENTS OF THE NATIONAL EMERGENCY NUMBER ASSOCIATION

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The National Emergency Number Association ("NENA") respectfully submits the following comments in response to the *Notice of Proposed Rulemaking* adopted by the Commission on September 22nd, 2011, in this proceeding.

COMMENTS

NENA is pleased that the Commission continues to demonstrate a strong commitment to achieving the promise of Next Generation 9-1-1 technology for the American people. As this rulemaking recognizes, there is an imminent need for Commission leadership to ensure the swift and effective roll-out of more modern 9-1-1 services, beginning with text messaging.

I. Deployment of Text-to-9-1-1

A. The Commission should facilitate the development and deployment of durable interim text-to-9-1-1 solutions.

1. Text-to-9-1-1 solutions that are deployed in the short term will likely be required to remain in place for up to ten years in some parts of the country.

Although the cycle time is decreasing, the pace of commercial network technology refreshment is approximately one cycle every 5-7 years in areas of the country with average population density, and longer for areas with below-average density. Coupled with the nascent state of text-to-9-1-1 as a real, offered-for-use technology, this implies that any short-term deployable technology will likely need to continue in use for nearly ten years. Consequently, it is important that the Commission strike a careful balance between the need to deploy *some* text solution quickly, the need to deploy solutions that are sufficiently robust and full-featured to adequately meet the needs of the public and the public safety community over the next decade, and the need to conserve precious and increasingly scarce public resources. The primary interests of the public are accurate dispatching and rapid response. These interests are mirrored on the public safety side by interests in quick, verifiable message delivery and message-associated location data. Without either of these factors, any text-to-9-1-1 solution should receive extra scrutiny before being deployed.

2. The roll-out period for text-to-9-1-1 should be short, but should not compromise functionality.

As the Commission rightly recognizes, the need for a text-to-9-1-1 solution is concrete and immediate. Speed of deployment, standing alone, however, cannot ensure acceptable outcomes for the safety of the public. Equally important is the functionality of the solutions ultimately adopted. For example, an SMS/IP-relay based solution could be deployed quickly, but might significantly in-

crease response times. Application-based solutions might take longer to deploy and capture only a subset (substantial and growing though it be) of all mobile subscribers, but could offer better outcomes in terms of response time, location-based routing, and direct communications. Finally, a pure SMS-to-PSAP solution, might be preferable from a simplicity and user-familiarity standpoint, but could be costly to implement in carrier networks and pre-NG9-1-1 PSAP customer premises equipment (CPE), particularly if accurate location information is to be relayed to PSAPs. As the Commission evaluates the available solution, however, one critical point that should be at the forefront of its analysis it that the primary objective of an interim text solution should be to provide parity of access to 9-1-1 between hearing individuals, and the deaf or hard of hearing.

NENA is aware that ATIS and other industry partners have already undertaken significant efforts aimed at identifying potential solutions to meet the need for interim text-to-9-1-1. That effort, led by the ATIS Interim Non-voice Emergency Services Incubator, has tentatively identified IP-relay as its preferred solution. NENA has participated in that effort and is pleased that the industry has tackled this challenge head-on. At the same time, NENA is concerned that the Incubator's self-imposed deadline for implementation of a recommended solution, June 2012, may have skewed the results of this otherwise highly beneficial effort. Consequently, NENA recommends that the Commission provide the industry, the public safety community, and the accessibility community with time to evaluate the comments received in this docket as well as the report of the EAAC and revisit this issue via a further notice in the first half of 2012. That process could yet yield the same conclusion at which the Incubator has already arrived. Following that process, however, will provide needed time for the public safety and accessibility communities to work with their industry partners to ensure that any interim text solutions that are allowed can

meets the needs of the public and emergency responders without imposing undue burdens on carriers or PSAPs.

3. Any interim solution the Commission allows must leverage existing call paths and service processes.

Whether an interim text messaging solution is application-, relay-, or SMS-based, how messages are received and processed in PSAPs is of equal importance to how they are originated from subscriber equipment. Because of the high cost of PSAP upgrades and the imminent need to upgrade PSAP equipment, software, and service processes to NG9-1-1 capabilities, NENA considers it important that any interim text messaging solution leverage, to the maximum extent possible, existing assets and service processes. This means that any interim text solution must have the ability to route text streams correctly based on subscriber location, to deliver subscriber information (e.g., name and call-back number) and location through the pANI/ALI process, and to provide direct interaction with the most local primary PSAP possible. In addition, each of these requirements must be met regardless of whether a subscriber initiates or continues a text-to-9-1-1 string through that subscriber's home network or a roaming partner.

Beyond these important technical considerations, the Commission should also consider the myriad operational impacts of any proposed interim text solution. Each of the three options most frequently discussed – direct SMS, application-based text, and IP-relay – has different characteristics that, depending on how each is implemented, will have profound impacts on PSAP operations. For example, IP-relay text could require little retraining for telecommunicators already accustomed to handling other types of relay calls (e.g., ASL video, foreign language, etc.), but would likely result in significant increases to call length and round-trip lag time. Direct SMS and application-based text, by contrast might require significant additional training covering everything from basic familiarity with new software packages to esoteric (to some) text ab-

breviations and jargon, but could yield lower average session lengths and round-trip lag time. The Commission should carefully evaluate these costs for each potential solution.

4. Multiple solutions could be viable for text-to-9-1-1.

NENA declines to identify a single most-favored type of solution (e.g., SMS-based, IP-relay based, application based, etc.) at this time. However, the NPRM asks specific questions about the suitability of application-based text messaging solutions which have not previously been the subject of extensive comments in this or any other docket. NENA therefore offers some observations to inform the Commission's efforts going forward, but cautions that these comments do not represent an endorsement of application-based text solutions, generally, or of any application or model, specifically.

The prevailing consumer text mode in the United States is SMS, a non-application-based text messaging platform. In addition to being the most widely-available platform, SMS is also the most interoperable, working between nearly every device on every network in the United States. SMS is also a significant revenue source for carriers, making it an unlikely proposition that carriers would suddenly abandon SMS in favor of generalized application-based text messaging solutions. Nevertheless, NENA is aware of proposals by some parties to limit the interim deployment of text-to-9-1-1 to specialized applications for individuals with disabilities. As the Commission evaluates either a generalized or specialized application-based interim text solution, it should consider the following factors.

a. An application-based approach could lower costs for users, PSAPs, and carriers.

Conditions in two relevant markets could give application-based text messaging cost advantages over SMS-based solutions. First, the cost of mobile data service for consumers has decreased as consumers increasingly adopt

smartphones and other advanced devices, and as carriers extend the coverage footprint and backhaul capabilities of advanced-technology networks. On a per-message basis, however, the cost of SMS text has not seen similar declines. Consequently, the cost to consumers to send text messages to 9-1-1 could be lower under an application-based model than under an SMS-based model. Second, PSAPs could also enjoy cost savings under an application-based model by obtaining redundant commodity bandwidth service to receive text messages, rather than carrier-specific data links that might be required to implement SMS on a ubiquitous basis. Finally, an application-based solution might require few, if any, changes in carrier networks if application-originated text messages could be routed over existing data links using existing location-based routing technology and E9-1-1 service processes.

While it is easy to conceive of cost savings from an application-based text model, NENA considers it important to point out that the existence and magnitude of any such savings is highly dependent upon the precise technology and deployment method adopted. For instance, an application-based text solution that assumes the existence of broadband connectivity on the part of a PSAP could fail in areas where PSAPs do not currently have access to such service. Because NENA estimates that as many as 25% of PSAPs may not yet have broadband data service, this limitation cannot be ignored. NENA believes that *any* interim text solution should avoid diverting resources from critical precursor upgrades such as basic 9-1-1 service in the ~110 counties that currently lack such service, or Wireless Phase II E9-1-1 service.

b. Applications could access advanced location-determination capabilities.

Because 9-1-1 text applications would necessarily run on smartphones or "advanced devices," their call streams could, in some instances, operate outside the normal 9-1-1 voice call path. Though it may seem counterintuitive, this architecture could improve the accuracy of location infor-

mation associated with "calls" from such applications beyond that available for customers of some mobile network providers, depending on conditions. For instance, some mobile networks presently operate in a network-only mode, ignoring location data available from device-based radiolocation sensors such as GNSS and WiFi receivers, and inertial sensors such as gyroscopes and accelerometers. For subscribers of these networks, the fix derived from these sources could, in some circumstances, be superior to that available from network-based triangulation or trilateration sources when the latter are adversely impacted by unfavorable network geometry or low cell-site density. Conversely, of course, such applications would suffer a fall-off in location accuracy when operating in environments for which network-based location technologies are superior: An application running on a handset operated indoors might be unable to trigger higher-powered network-based positioning beacons (or transmit to higher-sensitivity network-based positioning receivers) that would otherwise be available during a "normal" 9-1-1 voice call.

For some proposed application solutions, however, *both* handset- and network-based positioning systems could be used in concert. For example, an application could trigger a regular 9-1-1 voice call using the handset's CMRS voice service. Then, a telecommunicator who receives a silent call could trigger software to check the call-back number or pANI string against a database of inbound text sessions to establish a separate text path for the application session. This would already provide normal network-based location information in areas equipped for Wireless E9-1-1 Phase I or II. In addition, however, while it is not ideal, device-derived location data could accompany the text session outside the normal call flow. NENA believes that the most robust location solution will leverage *both* network-based and handset-based technologies, intelligently selecting the technology that produces the best fix under prevailing conditions. As the Commission moves toward final rules, it should keep in mind the

varying properties of each potential solution class and their resulting impact on routing accuracy and response times.

c. Wide-area text answering points should have a temporary and explicit timeframe of operation, if deployed at all.

In general, NENA is opposed to the aggregation of text messages within a region or, worse yet, nation-wide to a single regional or national text answering point. Much of the success of 9-1-1 as a public service over the past 45 years can be attributed to the local nature of 9-1-1 systems: Because telecommunicators and dispatchers are kept local, they have access to ground-truth knowledge about roads and road conditions, local customs and language, and the people and institutions that they serve. While the value of this knowledge may defy attempts at measurement, it is unquestionably great. Without such knowledge, telecommunicators and dispatchers at wide-area text answering points will face significant barriers to effective response that local telecommunicators and dispatchers do not. For instance, roads shown on digital maps available to dispatchers at a wide-area answering point may not accurately reflect up-to-the-minute conditions such as washouts, train movements, special-event traffic flows, etc. Duplicating this information to a useable level at larger scales may eventually be feasible, but NENA does not believe that it is realistic at this time.

NENA recognizes, however, that prevailing economic conditions in some states may prohibit the immediate introduction of interim text-to-9-1-1 capabilities on a PSAP-by-PSAP basis. Therefore, NENA recommends that if the Commission adopts rules allowing for the delivery of text messages to a designated aggregation center, it impose three conditions. First, the Commission should prohibit aggregation of text messages on a nation-wide basis. Second, the Commission should allow regional aggregation only upon a showing by participating counties or municipalities that the delivery of text messages to an aggrega-

tion center is in the public interest. Finally, the Commission should establish a maximum interval during which an aggregation center can remain operative, once established, to drive the handling of text messages to the local level.

d. Relay-based applications must be evaluated carefully.

Because relay-based text applications have received significant attention from industry standards bodies and others, NENA considers it important to provide a few comparative points between this type of application-based text-to-9-1-1 and other application-based text methods. The fundamental difference between direct-to-PSAP text applications and relay-based applications is the introduction of a third party to the call path: In a relay-based model, text messages from a registered consumer device are delivered first to a regional or national relay center. The relay center then places a voice call to a PSAP based on either a user-submitted location entered at the time of registration, or provided by the user via text message at call time. The existing community of relay service providers is a tremendous asset to the community of users who require their services and to the public safety community that relies on them to ensure the accessibility of 9-1-1. In many cases, providers maintain resilient, redundant facilities with expert call takers dedicated to 9-1-1 relay calls. Even where this is the case, however, subtle differences in technology can cause major differences in how calls are handled.

Depending on the precise routing arrangement established by a relay center, outbound voice calls from the relay center to the PSAP may arrive either via normal 9-1-1 trunks (similar to the current VoIP process), via a 10-digit emergency line, or even via 10-digit non-emergency line. Each scenario presents different challenges for PSAPS. For example, in both 10-digit scenarios, ANI and ALI queries may not be automatically triggered, or, indeed possible; and in all three scenarios data fields actually returned from an ANI or ALI query are likely to contain er-

roneous data. Particularly in the case of location information, this is a significant shortcoming: Except in the case where a user is located at his or her registered location at call time (which may be rare for a mobile user), the location information provided automatically by the relay center will differ from the user's actual current location. Even before the call reaches a PSAP this can cause problems, increasing the amount of time required to route the call to the *correct* PSAP as the relay agent takes and verifies location information from the user.

NENA is also aware of concerns expressed in the industry that not all relay solutions would provide nation-wide operability. If true, this represents a significant shortcoming of the IP-relay model. In any event, NENA considers the idea of a single nation-wide relay center as an unlikely candidate for an interim text solution for technical, reliability/resiliency, and operational reasons. First, any relay solution would necessarily suffer from all of the technical challenges related above. Second, a single-center approach would introduce an unnecessarily high probability that a single device or power failure could cause a nation-wide relay outage. Finally, variations in language, syntax, and local public safety codes and jargon could impede communications between a national relay center and the local PSAPs that must ultimately service user calls. Consequently, NENA recommends that the Commission evaluate IP-relay solutions carefully to ensure that any chosen system will operate reliably on a region-wide, and, in the aggregate, nation-wide basis.

5. The capacity of PSAPs to handle text-based emergency service requests can be understood using conventional telecommunications engineering concepts.

Rightly concerned about the operational impacts of introducing a novel technology and operational model into the PSAP, the NPRM asks whether and how the admission of text-based emergency service requests will affect the ability of telecommunicators to service each request and efficiently dispatch field responders. In particular, the NPRM

asks how the capacity of PSAPs can be analyzed, in general, and whether PSAPs will have sufficient capacity to handle the influx of new service requests generated by this change. NENA believes that the capacity of PSAPs to handle any volume of traffic can be understood using conventional traffic engineering principles.

Telecommunicators at a PSAP can be thought of as analogous to trunks in a circuit-switched network that includes the ability to place calls on hold when all trunks are busy. Then it is a simple matter to calculate the call-handling capacity of an N-position PSAP for a specified minimum grade of service.

Of course, some variables in the text-to-9-1-1 context will be different: "Call" or session length will likely be higher than for the average voice call; texters who receive an initial "please hold" message, if implemented, could chose to make a voice call instead; or, session persistence issues could lead to diminished carrying capacity as snippets of service time are lost to repeating previously communicated information once a session is re-established. In general NENA believes that some text-based service requests will replace what would have been voice or TTY calls to 9-1-1, had texting remained unavailable. To the extent that enabling text-to-9-1-1 does generate additional traffic, NENA believes that this traffic represents an existing need that is currently being underserved, and which will expand over time as text-to-9-1-1 "catches on" with the public. In the disability context, for example, "callers" for whom access to 9-1-1 is presently cumbersome or even impossible might generate new service requests. NENA is convinced, however, that PSAPs around the country would be able to handle this newly-generated traffic as they realize efficiencies from canned-response options and other features of advanced systems for handling text-based service requests. It has been suggested for instance, that one telecommunicator might be able to handle more than one text "call" at a time. NENA has not yet evaluated that suggestion in detail, however, and has

significant concerns that allowing such multitasking as a routine matter could be detrimental to public safety.

6. The Commission should consider reasonable consumer expectations in formulating its policies to expedite text-to-9-1-1 deployment.

At present, there is no requirement that carriers or PSAPs track incidents where a consumer tries to contact 9-1-1 by text message. Consequently, little is known about this phenomenon. For PSAPs, in particular, this is the only type of information that *could* be available, since there exists no mechanism for information about an attempted text-to-9-1-1 to be communicated to a PSAP. Anecdotally, NENA is aware of numerous reported incidents when consumers attempted to text 9-1-1, to no avail. Perhaps most famously, students trapped in a classroom by the Virginia Tech shooter attempted to text 9-1-1 to avoid drawing the attention of their assailant. NENA believes that voice will remain the dominant method of contacting 9-1-1 for the foreseeable future, but particular use cases such as duress situations or use by individuals with disabilities make a silent option like text an indispensable alternative. Particularly given the well-documented penetration of text messaging technology in day-to-day consumer use, the absence of data about attempted uses of text messaging to contact 9-1-1 should not diminish its obvious importance as an emergency communications tool.

In addition to the concerns stated above, the Commission should consider the forthcoming report of the Emergency Access Advisory Committee. That committee's unique nature and singular focus give its findings added weight, particularly since individuals with disabilities will likely reap the greatest and most immediate benefits from the deployment of text-to-9-1-1 capabilities. In addition, the scope of the EAAC's statutory mandate makes it appropriate for the Commission to consider the committee's input in formulating a policy response to the need for a

durable but quickly-deployable text-to-9-1-1 solution, and NENA endorses this approach.

B. The Commission should support the adoption of standards-based methods for handling text messaging in Next Generation 9-1-1 systems.

NENA has consistently advocated the use of open standards-based methods for sending, transporting, receiving, and processing all modes of communication in a Next Generation 9-1-1 environment. Standards-based methods provide the public and the public safety community with three key benefits: reliability, interoperability, and competitive price pressure. Each of these factors has heavily influenced NENA's own standards work, and NENA strongly recommends that the Commission take an active role in ensuring that NG9-1-1 systems and service processes do not become captive to technologies that are proprietary or tied to the architecture of any particular access or transport network or origination service.

1. SIP and RTT-based text solutions will be more cost effective in the long term than available short-term solutions.

While interim solutions for text-to-9-1-1 must contend with legacy access networks, single-function originating services, and less-than-nimble service processes, the situation for NG9-1-1 text messaging is radically different. Because NENA's model for NG9-1-1 assumes end-to-end IP-based connectivity between subscriber devices and PSAPs, Next Generation text-to-9-1-1 technologies that leverage standards-based text delivery methods including Session Initiation Protocol (SIP) and Real Time Text (RTT) can originate from any number of devices, be carried on any number of access and originating service networks, and be handled in within the PSAP in a variety of ways not possible with current analog or Time Division Multiplexed (TDM) technology. In addition, service processes for text sessions based on these standards will be easier to adapt to changing network conditions and PSAP

needs, while at present similar changes for voice calls are either impossible or prohibitively expensive. For instance, current 9-1-1 systems may, in some circumstances, rout voice calls to a backup facility in the event of a primary facility failure. Should that facility fail or lack sufficient capacity to handle the diverted traffic, however, current-generation networks often do not provide for additional failover modes. NG9-1-1, by contrast, will allow individual PSAPs and regions or states to design intelligent, graceful failover modes that can distribute incoming text streams to multiple PSAPs based on capacity, or route text traffic around trouble spots to ensure delivery. Although some short term solutions may offer some of these benefits, depending upon how they are actually implemented, no single solution offers the robustness, functionality and cost effectiveness of SIP/RTT based text.

2. Advanced text and multimedia services will provide enormous benefits to individuals with disabilities.

While NENA cannot hope to present the benefits of advanced text and multimedia services as effectively as the members of the Emergency Access Advisory Committee, there are a few critical points that bear mentioning in advance of the Committee's report: First, the text capabilities of NG9-1-1 systems will far surpass anything achievable on an interim basis. The ability to conduct text conversations enhanced by features such as delivery status notification, typing indication, and session persistence will improve the reliability of text-based 9-1-1, and the sense of security users derive from the system. Second, Real Time Text (RTT) will further enhance the conversational nature of calls, allowing for faster, more accurate communication between telecommunicators and callers, and will better emulate the flow of TTY conversations to which many deaf or hard of hearing users are accustomed. Finally, three-way video calling will allow telecommunicators to glean tremendous information about a caller's situation, environment, and emotional state while communicating via an American Sign Language interpreter. NENA

considers it imperative that end-state NG9-1-1 systems exhibit all three of the capabilities to ensure that individuals with disabilities are able to access emergency services in the most efficient and familiar ways possible.

3. Consumers expect to access 9-1-1 using text and multimedia communications.

NENA and other have previously filed extensive comments detailing the widespread public expectation that it is, or soon will be, possible to send an SMS text message to 9-1-1. The record shows much debate as to whether this expectation is reasonable, however, and NENA's own comments reflect the consensus view that SMS, as it is currently deployed, is not suitable for use as an emergency communications tool in most areas. As the Commission rightly notes, however, there are a number of ongoing SMS trials and laboratory experiments. NENA continues to support the development of advanced SMS solutions that extend the functionality of legacy mobile networks and believes that the fruits of these efforts will play a key role in expanding access to text-to-9-1-1 over the coming decade. Ultimately, NENA believes it is important that consumers have access to a 9-1-1-capable text messaging platform that is "transparent," meaning that, regardless of how that platform operates on the backend, it appears to the user to function as *the* primary text platform on a given device. Until such time as that level of service can be achieved, NENA expects that much work will be required to manage consumer expectations about the capabilities of existing 9-1-1 systems, and those systems that are upgraded with interim text-to-9-1-1 capabilities.

4. The Commission can encourage the development of multimedia technologies for 9-1-1 by clarifying that providers of such technology are "other emergency communications providers."

Because of the enormous stakes of even a routine 9-1-1 call, NENA has long advocated for robust liability protections for vendors and service providers operating in the

9-1-1 space. Although such protections can remove incentives for companies and individuals to engineer products or provide services to the highest possible standards of safety, NENA is convinced that without robust liability protections the market for many 9-1-1 related products and services either would not exist at all or would not be competitive. The same holds true for products and services destined to enable NG9-1-1 functionality, like multimedia (video, picture, text) communications. Consequently, NENA encourages the Commission to clarify that it interprets 47 U.S.C. § 615(a) to classify providers of products and services required to enable these NG9-1-1 features as "Other Emergency Communications Providers" under subsection (b).

5. The Commission should incorporate the forthcoming CSRIC report into this docket.

Consistent with the Chairman's Five-Point Plan, a significant portion of the work assigned to the newly-reconstituted CSRIC focuses on NG9-1-1: Five of the ten CSRIC Working Groups are preparing reports on subjects highly relevant to this rulemaking, and the remainder are likely to produce reports that will have significant indirect impacts on 9-1-1 overall. Working Group 1, in particular, has undertaken a thorough review of the current and emerging standards that will play a role in the deployment of NG9-1-1. NENA believes that the results of the CSRIC process will be beneficial to the Commission as it considers how best to encourage the near-term availability of text-to-9-1-1 capabilities and the longer-term transition to NG9-1-1. Therefore, NENA recommends that the Commission formally incorporate the CSRIC final report, or such interim reports as may become available within a reasonable time, into the record in these dockets.

C. Enabling text-to-9-1-1 service could improve the reliability and resiliency of 9-1-1 service for mobile network subscribers.

Following the recent East Coast Earthquake, NENA's headquarters was significantly affected by mobile communications challenges: After the shaking stopped, three major mobile networks used by NENA staff were unable to complete a voice call. Each, however, could still carry data traffic (albeit with limited speed) and each could still accept SMS messages. Under circumstances such as those, the ability to contact 9-1-1 via text could have made a tremendous difference in outcomes for individuals in distress. For consumers, access to 9-1-1 via the now dominant mobile mode of communications might have been maintained. For PSAPs, service volumes could have remained near usable capacity, instead of precipitously dropping. NENA believes that similar conditions would obtain in other mass-calling scenarios. Consequently, NENA believes that adding text and other multimedia-based emergency services options to the existing voice option could improve the ability of the public to reach a 9-1-1 telecommunicator during a disaster or other mass-calling event. Critically, the reliability and resiliency advantages of SMS or data-based text-to-9-1-1 are similar in both the short-term E9-1-1 context and the longer-term NG9-1-1 context.

D. The Commission should facilitate an orderly deployment of text-to-9-1-1 capabilities on a uniform, nation-wide basis.

1. The Commission must ensure nation-wide uniformity of the practical aspects of text-to-9-1-1 operation.

Ultimately, the need for nation-wide operability across mobile carriers with varying network technologies and interconnection arrangement will necessitate a regulatory approach that accomplishes three goals: First, the approach adopted must ensure that text messages can be accepted from consumers and delivered to PSAPs in a uni-

form manner, using standard protocols, without regard to the network from which they originate. Second, the approach adopted must set firm but fair deadlines by which carriers are required to support text-to-9-1-1 after a PSAP, group of PSAPs, or 9-1-1 authority makes a request to receive such service and demonstrates its ability to receive and respond to such messages. Finally, the approach should provide carriers with sufficient flexibility to implement competing technologies to provide the required service, while ensuring that peculiarities of any particular network do not introduce dangerous variations in the type, quality, or reliability of message-associated information delivered to PSAPs or in the speed with which messages are delivered.

NENA supports the Commission's conclusion that "PSAPs, providers, and vendors should have the option to implement SMS-to-911 as a short-term alternative." Additionally, however, NENA feels strongly that *some* solution – whether it be SMS, application-based text, or text relay – *must* be implemented on a nation-wide basis. Without at least one universal solution, 9-1-1 systems could become fragmented, leading to pervasive consumer confusion about the type or types of text-to-9-1-1 available from county to county or region to region. In the same vein, NENA also agrees with Intrado that any text-to-9-1-1 solution should use the digits "9-1-1." "9-1-1" is the established identifier for emergency services communications, and is already pervasive in the public awareness. To capitalize on this existing base, NENA believes that it is imperative that any text-to-9-1-1 solution that relies on a digit string or short code incorporate the digits "9-1-1." Doing so will help to minimize consumer confusion and reduce public education costs. For the same reasons, NENA believes that any short code implemented must be uniform across carriers and geographic or political boundaries.

2. Demonstrated 9-1-1 system readiness should trigger carrier obligations to provide text-to-9-1-1 service.

NENA firmly believes that the notify-and-implement regime adopted by the Commission in the wireless E9-1-1 context is a practical and workable model for triggering carrier obligations in the text-to-9-1-1 context. NENA is sensitive to the concerns express by some carriers, however, that PSAPs could make requests for service prior to the deployment of the equipment and procedures necessary to handle text-to-9-1-1. To balance the needs of the public and the public safety community with the interests of private carriers in minimizing capital inefficiencies, NENA proposes a modified regime that would both speed the deployment text-to-9-1-1 capabilities and protect carriers from unreasonable requests to provide service where no capability exists to handle text messages in the requesting PSAP. Such a regime should follow three general principles: First, it should provide for a notice-and-implement regime that requires PSAPs to provide carriers from whom they request delivery of text messages with a standardized showing, incorporating common elements, that the PSAP has the ability to receive and process text messages delivered via standards-compliant means. Second, the regime should require carriers to comply with such requests quickly, according them a rebuttable presumption of validity, absent facial deficiencies in the request that would justify a delay. Finally, the regime should provide an expedited mechanism to settle disputes between carriers and PSAPs concerning the validity of a request for service.

Although NENA casts its comments in this section mostly in terms of "PSAPs," it is important for the Commission to note that NG9-1-1 systems are, in many cases, more likely to be operated by larger political units such as counties, regions, or states. NENA believes that it will prove most efficient if requests for text service originate from these larger units, reducing costs for both the public and the carriers called upon to provide service. For example, public-side costs incurred in preparing readiness

showings could be substantially reduced if, instead of over 6,000 PSAPs providing showings, only ~2,000 county-equivalents do so. Similar savings would likely also be recognized on the carrier side. NENA cautions the Commission, however, that 9-1-1 remains an intensely local service that, in many states, is provided by small local agencies below the county level with little or no higher-level coordination or oversight. In order to maintain the autonomy to which 9-1-1 system operators have become accustomed, NENA recommends that the Commission refrain from mandating a regional or state-wide approach to system readiness showings, and instead make such aggregated showings optional, at the election of the states.

3. Consumer education will be critical during the roll-out of NG9-1-1 services.

As explained above, managing consumer expectations and understanding of deployed capabilities in local and regional 9-1-1 systems will be critical to the successful deployment of NG9-1-1 and any interim advances in 9-1-1 technology. NENA believes that the Commission has demonstrated itself to be a tremendous resource in the design and execution of successful public education campaigns, most recently with the highly successful Digital Television Transition. As the nation's 9-1-1 systems move toward deployment of Next Generation capabilities, NENA encourages the Commission to design a similar campaign, modifying the nation-wide approach of the DTV campaign to account for the local nature of 9-1-1 systems. By providing states, regions, and localities with template materials such as canned video, audio, and print materials, along with a style guide for developing visually and aurally consistent derivative works, the Commission could provide enormous economies of scale to the education campaign and help local 9-1-1 systems and centers to effectively educate the public about the roll-out of new system capabilities.

4. The Commission should consider the conclusions of the Emergency Access Advisory Committee when formulating proposed rules.

Consistent with the NPRM, NENA believes that it *is* appropriate for the Commission to consider the conclusions of the Emergency Access Advisory Committee when formulating proposed rules in this proceeding. The EAAC holds a specific congressional mandate to carefully consider the accessibility and parity of service of existing and future technologies, and NENA has every confidence that its capable members are doing so as we speak. Because of the strong potential of both interim and long-term text technologies, as well as NG9-1-1 multimedia technologies to provide substantial benefits to individuals with disabilities, NENA strongly recommends that the Commission incorporate the EAAC report into the record of this proceeding and request comment on its finding and recommendations. Pub. L. 111-260, § 106(c) (2010).

II. Prioritization of 9-1-1 Traffic

NENA believes that 9-1-1 traffic should receive priority routing and priority access to network resources such as trunk lines or channel capacity. Particularly during major emergencies, the ability of individuals in distress to reach 9-1-1 can mean the difference between life and death. As the Commission notes, prioritizing 9-1-1 traffic could have an adverse impact on the ability of other consumers to complete non-emergency calls that, nonetheless, have a social benefit. To the extent that 9-1-1 traffic does displace other traffic, however, NENA believes that the social benefit of completing 9-1-1 calls that might otherwise be lost outweighs the benefits of completing other calls that are lost as a result of priority-induced network congestion.

Priority mechanisms for 9-1-1 traffic will become increasingly important as network architectures continue to flatten. For example, in advanced LTE or IMS-based networks, all traffic will be carried in essentially the same manner, but class- and quality-of-service requirements

can be specified on a per-session basis to differentiate between real-time services such as voice calls and less sensitive traffic such as email and web page data. This capability to easily prioritize traffic in commercial networks is likely to expand over time as the United States transitions away from the PSTN toward a converged IP-based future. This transition could require some additional standards work to ensure seamless interworking between IMS-based access networks and originating services and Next Generation 9-1-1 systems. NENA has already formed a special working group to address just such issues, however, and the carrier and OSP communities are actively engaging with the public safety community to anticipate such needs and proactively develop solutions.

Critically, NENA is aware that current and emerging industry standards including LTE and IMS support vastly more flexible priority routing and transport capabilities than do legacy networks. As such capabilities become commonplace in access and transport networks, NENA believes that the cost of providing priority routing and transport to 9-1-1 traffic will decrease. NENA therefore recommends that the Commission consider this factor as it evaluates which networks will be subject to prioritization requirements and over what timeframes.

A. Prioritizing 9-1-1 traffic in common-carrier networks is not unreasonable discrimination.

NENA does not believe that prioritizing 9-1-1 traffic would be considered "discrimination" under § 202(a) of the Communications Act. As a threshold matter, 9-1-1 service is unlikely to be ruled a "like" service to ordinary telephone calling, because it is different from basic telephone service in at least two material functional respects. *See, e.g., Am. Trucking Ass'n* v. *FCC*, 377 F.2d 121, 127 (D.C. Cir. 1966). First, 9-1-1 service provides location-based routing for all calls made to a single universal number, rather than number-based routing for regularly-dialed calls. Second, 9-1-1 service also provides PSAP-facing service enhancements such as Automatic Number Identifica-

tion and Automatic Location Identification that differ from consumer-oriented "Caller ID" services. Additionally, NENA believes that consumers do not perceive 9-1-1 calling as performing the same functions as regular calling. Precedent thus implies that 9-1-1 service would not be considered the functional equivalent of regular telephony for purposes of a § 202(a) analysis. *See generally Am. Broadcasting Companies* v. *FCC*, 663 F.2d 133 (D.C. Cir. 1980). Even if it were, however, NENA does not believe that prioritizing 9-1-1 service would be ruled discriminatory.

It is true that "…unreasonable 'discrimination in charges,' … can come … in the form of an enhanced service for an equivalent price," *Competitive Telecomm'cns Ass'n* v. *FCC*, 998 F.2d 1058, 1062 (D.C. Cir. 1993) (citing *Sea-Land Svc., Inc.* v. *I.C.C.*, 738 F.2d 1311, 1317 (D.C. Cir. 1984)), and that prioritizing 9-1-1 traffic could arguably be considered a service enhancement. For purposes of the economic analysis of a price discrimination allegation, however, NENA believes that the calculable decrease in the probability that a non-prioritized call will be completed due to network congestion resulting from the prioritization of 9-1-1 traffic represents a customer detriment that offsets the benefits provided by enhancing 9-1-1 service.

Finally, even if prioritizing 9-1-1 traffic was found to be discriminatory under § 202(a), it would almost certainly *not* be judged unreasonable: "The reasonableness of [a] price disparity must be judged by the circumstances in which it is assessed." *Nat'l Ass'n of Regulatory Utility Comm'rs* v. *FCC*, 737 F.2d 1095, 1136 (D.C. Cir. 1984) (hereinafter *NARUC*). In *NARUC* the D.C. Circuit upheld a Commission decision on certain provisions of the Universal Service Fund, finding that the Commission's action "represent[ed] its considered judgment that the benefits to be achieved [by the Commission's action] are more important than adhering to an inflexible access charge plan." *Id.* Given the tremendous benefits to public safety that could be achieved by prioritizing 9-1-1 traffic, NENA

believes that the Court would also look favorably on a similar conclusion in the 9-1-1 context.

Taken together, NENA believes that the precedents of the D.C. Circuit clearly imply that prioritizing 9-1-1 service would not be deemed unreasonably discriminatory. NENA therefore recommends that the Commission consider requiring the prioritization of 9-1-1 service notwithstanding the provisions of § 202(a) of the Act.

B. Prioritizing traffic in broadband networks is consistent with the Open Internet Order.

In the broadband context, NENA agrees that prioritizing emergency service requests represents a deviation from the strict requirements of the *Open Internet Order* that should be authorized in the interest of promoting public safety. Likewise, NENA believes that the notification regime adopted in the *Open Internet Order* is consistent with the needs of 9-1-1 authorities and other public safety agencies to understand the impact of certain major changes in network management practices that could affect the delivery of emergency services. Although a broader notification requirement might provide such agencies with additional information that could be useful in certain circumstances, there is a strong possibility that requiring carriers to give notice of every routine change to network management practices could lead to information overload at public safety agencies in the best case and dangerous confusion or misunderstandings in the worst. Historically, robust outage reporting requirements and Commission-led efforts to develop and disseminate "best practices" information has allowed carriers to understand and anticipate the impact of network changes on 9-1-1 facilities in particular, and NENA believes that similar methods can adequately protect the interests of the public safety community in the future.

CONCLUSION

This NPRM represents the Commission's second step toward implementing rules to enable the deployment of NG9-1-1 on a nation-wide basis. NENA appreciates the quick cadence the Commission has set, and urges the Commission to continue its efforts apace. The public rightly expects the ability to access emergency services using modern communications technologies and networks, and much work will be required to meet that expectation. NENA is committed to assisting the Commission in doing so, and looks forward to the Commission's next notice in this proceeding.

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